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Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, No 9, 1950, pp 1433-1440.

A DISCUSSION OF THE PROBLEMS OF SOVIET SCIENCE IN THE FIELD OF STRENGTH AND PLASTICITY OF METALS

The following abstract translation describes briefly an important meeting called to judge the rival plasticity theories of Il'yushin and Oding and their adherents, and gives the resulting resolution.

On 19 - 20 June 1950, a scientific colloquium on subject title was held in the Department of Technical Sciences, Academy of Sciences USSR. The colloquium was under the chairmanship of Academician A. A. Blagonravov. Preparations and conduct of the colloquium were organized by a committee of the administration, Department of Technical Sciences, consisting of the following: Academicians A. A. Blagonravov (chairman), I. P. Bardin, M. V. Keldysh, Ye. A. Chudakov, S. A. Khristianovich; Corresponding Members of the Academy of Sciences USSR A. M. Samarin, N. G. Chetayev, A. B. Chernyshev; Doctor of Technical Sciences G. V. Uzhik, and I. G. Vasil'yev (secretary). Also participating at the meetings were representatives from scientific institutions of the Academy of Sciences USSR, from academies of sciences of Union republics, and from affiliated scientific research institutes also representatives from productive enterprises, from planning establishments of various branches of industry, and from higher seats of learning -- in all, about 500 persons from 40 different organizations.

The meeting opened with an introductory speech by Academician A. A. Blagonrayov. The assembly then heard lectures by two Corresponding Members of the Academy of Sciences USSR; A. A. Il'yushin's speech entitled "The Main Problems of Soviet Mechanics in the Development of the Theory of Plasticity," and I. A. Oding's lecture entitled "Pa+hs of Development of the Soviet Science of Strength and Plasticity of Metals in Connectior With the Problems of Machinery Construction." In the resulting debate on these two lectures 25 persons, representing 20 organizations, took part. After this long discussion session, I. A. Oding and A. A. Il'yushin made concluding remarks, and the meeting closed with a resolution. Il'yushin and Oding represent the two main opposing views on plasticity.

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The following persons took part in the discussion:

- 1. A. A. Gvozdev: Central Scientific Research Institute of Industrial Constructions, and Institute of Mechanics of the Academy of Sciences USSR.
- 2. N. P. Shchapov: All-Union Scientific Research Institute of Railroad Transportation.
 - 3. V. I. Feodos'yev: Moscow Higher Technical School.
- 4. S. I. Gubkin: Active Member of the Academy of Sciences Belorussian SSR, and Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR.
- 5. Kh. A. Rakhmatulin: Active Member of the Academy of Sciences of Uzbek SSR, and Institute of Mechanics of the Academy of Sciences USSR.
- 6. S. V. Serensen: Active Member of the Academy of Sciences of Ukrainian SSR, Central Scientific Research Institute of Aircraft Engine Construction, and Institute of Machine Studies of the Academy of Sciences Ukrainian SSR.
- $7.\,$ A. Yu. Ishlinskiy: Active Member of the Academy of Sciences Ukrainian SSR.
- 8. S. T. Kishkin: All-Union Scientific Research Institute of Aviation Materials.
- 9. N. I. Chernyak: Institute of Structural Mechanics of the Academy of Sciences Ukrainian SSR.
- 10. N. N. Davidenkov: Active Member of the Academy of Sciences Ukrainian SSR, /Leningrad/ Physicotechnical Institute of Academy of Sciences USSR. /His letter was read at the meeting./
 - 11. B. N. Krasovskiy: The "Elektrosila" Factory.
- 12. N. Kh. Arutyunyan: Sector of Mathematics and Mechanics of the Academy of Sciences Armenian SSR.
 - 13. S. I. Ratner: All-Union Institute of Aviation Materials.
- 14. A. V. Stepanov; / Leningrad Physicotechnical Institute of the Academy of Sciences USSR.
- 15. N. I. Prigorovskiy: Institute of Machine Studies of the Academy of Sciences USSR.
- 16. Yu. N. Rabotnov: Institute of Mechanics of the Academy of Sciences USSR.
 - 17. V. M. Puchkov.
- 18. A. I. Petrusevich: Institute of Machine Studies of the Academy of Sciences USSR.
 - 19. A. I. Filippov: Central Bureau of Forge-Press Machine Studies.
- 20. S. I. Matveyev: Central Scientific Research Institute of Technology and Machine Studies.
 - 21. Academician M. A. Lavrent'yev.

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22. N. N. Sokolov.

- 23. B. M. Grelik: Scientific Research Institute of the Rubber Industry.
- 24. Academician M. V. Keldysh.
- 25. V. I. Feodos'yev.

The resolution mentioned above follows:

- 1. The assembly notes that Soviet science on the problem of strength and plasticity has attained significant success in the solution of problems of great importance to the national economy. This field of science, whose initial development was started by eminent Russian scientists already at the end of the past century, is being successfully cultivated at present.
- 2. In the Soviet Union the general problem of strength and plasticity is worked out in the following main directions: (a) mechanicomathematical, (b) physicochemical (metal sciences, etc.), and (c) physical.
- 3. The assembly believes that differences of opinion among the proponents of these three views on the theory of strength and plasticity do not really assume any major proportions; on the contrary, these views insure a healthy development and do not hinder cooperation among the different adherents.
- 4. The assembly believes that I. A. Oding's article published in the journal Vestnik Mashinostroyeniya, No 2, 1950, where the school headed by A. A. Il yushin was censured, is politically mistaken and harmful.
- 5. The assembly considers highly necessary calling together, in the fall of this year, a conference on the problems of strength and plasticity, with a number of lectures on the basic problems of the strength and plasticity of metals which reflect the present demands of practical work and the development of Soviet technology.
- 6. The assembly will ask the Presidium of the Academy of Sciences USSR to create a committee on strength and plasticity for co-ordinating and solving the problems in this field.
- 7. The assembly will ask the administration, Department of Technical Sciences of the Academy of Sciences USSR, to create a commission to judge the problem, taken up in the discussion, concerning the works of I. A. Oding in the field of cyclic viscosity, creep, and relaxation.
- 8. The assembly recommends a commission to discuss the remarks and wishes expressed at this assembly and to execute this resolution and publish it in the Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, and in the Vestnik Mashinostroyeniya.
- 9. The assembly calls on all scientific workers and engineers working in the field of strength and plasticity to further cooperative, friendly work for the sake of our great fatherland.

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